

WHAT IS CLAIMED IS:

1. A method of expanding video data to generate a serial word suitable for transmission across an interconnecting cable in a digital visual interface compliant system, the method comprising the steps of:
  - encoding a plurality of active video data bits to generate all of the bits other than the two most significant bits of a serial word;
  - setting the next to the most significant bit of the serial word to a binary level randomly and independently of the active video data bits wherein the next to the most significant bit is determined in response to an auxiliary data stream; and
  - setting the most significant bit of the serial word to a binary level determined by a control bit selected from the group consisting of a DC Balance Control bit and a rogue character sequence removal (INV) bit.
2. The method according to Claim 1 wherein the step of setting the most significant bit of the serial word to a binary level comprises the step of setting the most significant bit of the serial word to the binary level ‘1’ whenever the binary level is determined by the INV bit, and further whenever any character generates a reserved synchronization character upon encoding.
3. The method according to Claim 1 wherein the step of setting the most significant bit of the serial word to a binary level comprises the step of setting the most significant bit of the serial word to the binary level ‘0’ whenever the binary level is determined by the INV bit, and further whenever any character generates a reserved synchronization character upon encoding.
4. The method according to Claim 1 wherein the step of setting the most significant bit of the serial word to a binary level comprises the step of setting the most significant bit of the serial word to the binary level ‘1’ whenever the binary level is determined by the INV bit, and further whenever a sequence of two adjacent synchronization characters appears in any position across a span of three consecutive stream characters.

5. The method according to Claim 1 wherein the step of setting the most significant bit of the serial word to a binary level comprises the step of setting the most significant bit of the serial word to the binary level ‘0’ whenever the binary level is determined by the INV bit, and further whenever a sequence of two adjacent synchronization characters appears in any position across a span of three consecutive stream characters.

6. The method according to Claim 1 wherein the step of setting the most significant bit of the serial word to a binary level comprises the step of setting the most significant bit of the serial word to the binary level ‘1’ whenever the binary level is determined by the INV bit, and further whenever a rogue character sequence occurs upon expanding the video data to a serial word, and wherein the binary level defined by the INV bit is a ‘0’ otherwise.

7. The method according to Claim 1 wherein the step of setting the most significant bit of the serial word to a binary level comprises the step of setting the most significant bit of the serial word to the binary level ‘0’ whenever the binary level is determined by the INV bit, and further whenever a rogue character sequence occurs upon expanding the video data to a serial word, and wherein the binary level defined by the INV bit is a ‘1’ otherwise.

8. The method according to Claim 1 wherein the step of encoding a plurality of active video data bits to generate all of the bits other than the two most significant bits of a serial word comprises the steps of:

encoding a first bit of active video data and a bit selected from the group consisting of a DC Balance Control bit and a rogue character sequence removal (INV) bit, to generate a first bit of the serial word;

encoding a second bit of active video data, the first bit of the serial word, and at least one bit selected from the group consisting of an auxiliary stream data bit, the DC Balance Control bit and the INV bit, to generate a second bit of the serial word;

encoding a third bit of active video data, the second bit of the serial word, and at least one bit selected from the group consisting of the auxiliary stream data bit, the DC Balance Control bit and the INV bit, to generate a third bit of the serial word;

encoding a fourth bit of active video data, the third bit of the serial word, and at least one bit selected from the group consisting of the auxiliary stream data bit, the DC Balance Control bit and the INV bit, to generate a fourth bit of the serial word;

encoding a fifth bit of video data, the fourth bit of the serial word, and at least one bit selected from the group consisting of the auxiliary stream data bit, the DC Balance Control bit and the INV bit, to generate a fifth bit of the serial word;

encoding a sixth bit of video data, the fifth bit of the serial word, and at least one bit selected from the group consisting of the auxiliary stream data bit, the DC Balance Control bit and the INV bit, to generate a sixth bit of the serial word;

encoding a seventh bit of video data, the sixth bit of the serial word, and at least one bit selected from the group consisting of the auxiliary stream data bit, the DC Balance Control bit and the INV bit, to generate a seventh bit of the serial word; and

encoding an eighth bit of video data, the seventh bit of the serial word, and at least one bit selected from the group consisting of the auxiliary stream data bit, the DC Balance Control bit and the INV bit, to generate an eighth bit of the serial word.

9. The method according to Claim 1 wherein the step of setting the next to the most significant bit of the serial word to a binary level randomly and independently of the active video data bits wherein the next to the most significant bit is determined in response to an auxiliary data stream comprises the step of encoding an auxiliary stream data bit via performing an exclusive OR operation on the auxiliary stream data bit and the number ‘1’ to generate the next to the most significant bit of the serial word.

10. The method according to Claim 1 wherein the step of setting the next to the most significant bit of the serial word to a binary level randomly and independently of the active video data bits wherein the next to the most significant bit is determined in response to an auxiliary data stream comprises the step of encoding an auxiliary stream data bit to generate the next to the most significant bit of the serial word.

11. The method according to Claim 1 wherein the step of encoding a plurality of active video data bits to generate all of the bits other than the two most significant bits of a serial word comprises the steps of:

encoding a first bit of active video data and a DC Balance Control bit to generate a first bit of the serial word;

encoding a second bit of active video data, the first bit of the serial word, an auxiliary stream data bit and the DC Balance Control bit to generate a second bit of the serial word;

encoding a third bit of active video data, the second bit of the serial word, the auxiliary stream data bit and the DC Balance Control bit to generate a third bit of the serial word;

encoding a fourth bit of active video data, the third bit of the serial word, the auxiliary stream data bit and the DC Balance Control bit to generate a fourth bit of the serial word;

encoding a fifth bit of active video data, the fourth bit of the serial word, the auxiliary stream data bit and the DC Balance Control bit to generate a fifth bit of the serial word;

encoding a sixth bit of active video data, the fifth bit of the serial word, the auxiliary stream data bit and the DC Balance Control bit to generate a sixth bit of the serial word;

encoding a seventh bit of active video data, the sixth bit of the serial word, the auxiliary stream data bit and the DC Balance Control bit to generate a seventh bit of the serial word; and

encoding an eighth bit of active video data, the seventh bit of the serial word, the auxiliary stream data bit and the DC Balance Control bit to generate an eighth bit of the serial word.

12. The method according to Claim 11 wherein each of the encoding steps comprise performing an exclusive OR operation on the encoded bits.

13. The method according to Claim 1 wherein the step of encoding a plurality of active video data bits to generate all of the bits other than the two most significant bits of a serial word comprises the steps of:

encoding a first bit of active video data and a rogue character sequence removal (INV) bit to generate a first bit of the serial word;

encoding a second bit of active video data, the first bit of the serial word and the INV bit to generate a second bit of the serial word;

encoding a third bit of active video data, the second bit of the serial word and the INV bit to generate a third bit of the serial word;

encoding a fourth bit of active video data, the third bit of the serial word and the INV bit to generate a fourth bit of the serial word;

encoding a fifth bit of active video data, the fourth bit of the serial word and the INV bit to generate a fifth bit of the serial word;

encoding a sixth bit of active video data, the fifth bit of the serial word and the INV bit to generate a sixth bit of the serial word;

encoding a seventh bit of active video data, the sixth bit of the serial word and the INV bit to generate a seventh bit of the serial word; and

encoding an eighth bit of active video data, the seventh bit of the serial word and the INV bit to generate an eighth bit of the serial word.

14. The method according to Claim 13 wherein each of the encoding steps comprise performing an exclusive OR operation on the encoded bits.